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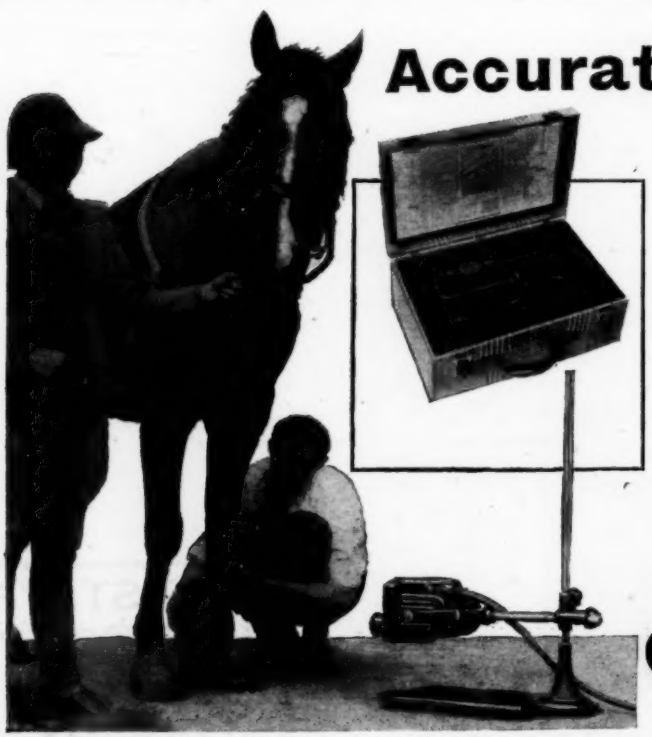

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Public Health Aspects of Salmonellosis in Animals*

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THE large majority of serotypes comprising the genus Salmonella are potentially pathogenic for both man and animals. It is to be expected, therefore, that the many and varied conditions under which the human population comes into contact with animals and animal products may present opportunities suitable for the transfer of infection from one host to another. As a result of the increased attention in recent years which has been given to methods for isolating and identifying Salmonella, we have a greater knowledge of the possible risks to human health from these sources of infection.

Until comparatively recently the number of known Salmonella serotypes were few, and many of these earlier known organisms were named according to the hosts affected and the clinical features of the diseases with which they were associated. For example, *S. typhi-murium*, *S. enteritidis*, *S. abortus ovis*, *S. abortus equi*, *S. anatum*, *S. pullorum*, and *S. gallinarum* were originally isolated from animals or birds, while those first isolated from man included *S. typhosum*, *S. paratyphosum B*, and *S. paratyphosum C*. In more recent times, the search for Salmonella in a variety of materials, and improved techniques for their isolation and identification, have revealed the more widespread and complex problems of host-parasite relationships. More than 300 different serotypes are now known to exist and this total is still rapidly growing. Moreover, host specificity has become increasingly unimportant as it has been shown that practically all serotypes are potentially pathogenic for man and animals alike. Thus, Schofield (1945) wrote, " To-day we recognise no boundary line separating animal from human Salmonella, but rather is there an ever-growing recognition of the great importance of the so-called ' animal strains ' in human infections." Practically all animal species which have been examined are susceptible to infection, and much attention has been given to identifying which particular species may act as reservoirs of infection. Salmonella are particularly common in poultry and pigs and there is little doubt that at the present time these two species form the major reservoir for these bacteria. Until the last few years little attention was given to the possibility that reptiles might also act as carriers. It is now known that both tortoises and lizards are frequently infected and usually show no clinical symptoms of disease. It is worth recalling that these reptiles lead a way of life which has remained practically unaltered by changes in methods of animal husbandry, and it appears that an acceptable balance of life has been established between these animals and Salmonella. Among farm animals, especially poultry and pigs, modern intensive methods of husbandry, which aim at overcoming the risks to animal health from overcrowding, overproduction, and malnutrition, may in themselves facilitate the rapid spread of infection from one animal to another. This may ultimately lead to an increased virulence of bacteria and the development of an epidemic. It is not, therefore, surprising that we have a known increased incidence of Salmonella infection in animal species which provide a large proportion of human food—the commonest serotype concerned being *S. typhi-murium*.

Concurrent with the increased infection rate among food producing animals, there has been a similar increase in the incidence of Salmonella food poisoning in man in this country. For example, 100 such outbreaks were reported in 1942 compared with 650 in 1947 (Conybeare, Allison & Taylor, 1949). During 1951-2, a total of 57 per cent. of 5,524 sporadic cases were attributed to Salmonella, and of these, *S. typhi-murium* was the serotype most frequently isolated. In 1941 Kauffman estimated that *S. typhi-murium* was responsible for 55 to 70 per cent. of human infections in England, Germany, and Den-

* This paper was presented to the Lakeland Division of the British Veterinary Association.

mark. During 1954, no less than 81.5 per cent. of outbreaks of food poisoning and 98.3 per cent. of sporadic cases were attributed to Salmonella infections, and of these, approximately 90 per cent. were caused by *S. typhi-murium*. Thus, in both man and animals there has been an apparent increase in the incidence of Salmonella infections and in both groups *S. typhi-murium* is the organism most frequently isolated.

Meat and Meat Products

A variety of foodstuffs have been incriminated or suspected as being the sources of human infections, and various preparations of meat are one of the commonest of these sources. Beef and pork are more usually infected than horse, sheep, and poultry meats. Meat may be derived from an infected animal received for slaughter and Table I shows the apparent incidence of infection among cattle in various countries. It must be emphasised that while these figures give some indication of the rate of infection among cattle in different countries, they cannot be considered as giving accurate information on the incidence, since results from surveys will depend upon the techniques employed and the nature of the material examined. Nevertheless, it is clear that the incidence shows considerable variation between one country and another and even between neighbouring districts in a country. The serotypes most usually encountered among cattle are *S. dublin* and *S. typhi-murium*.

TABLE I

SHOWING THE INCIDENCE OF SALMONELLA ISOLATED FROM CATTLE

Country	Percentage infection	Samples	References
Italy	0	Intestines, mesenteric lymph glands, and gall bladders	Dobelli, 1953
England	0·4	Faeces	Smith & Buxton, 1951
S. Africa	3·0	Calf intestines	Pullinger, 1950
Wales	2·2—14·0	Gall bladders	Field, 1948.
Ireland	10·0	Faeces	Ritchie & Clayton, 1951
	12·4	Liver swabs	
Germany	19·7	Suspected calves	Groeger, 1936

Surveys of the incidence of Salmonella in pigs in various countries illustrates the widespread nature of this type of infection throughout the world (Table II). It is generally considered that *S. cholerae suis* is the serotype most commonly found in pigs, although in some countries this organism may occur infrequently compared to *S. typhi-murium*. The susceptibility of pigs to this group of bacteria is emphasised by the variety of other serotypes which has also been identified in pig carcases. The carcases of cattle and pigs, especially, appear macroscopically normal at the time of slaughter, although the meat may be infected. Outbreaks of human infection from these sources are usually extensive and some hundreds of individuals may become infected from one such carcase (Glasser, 1937; Camps, 1947; Report, 1950).

In addition to the infection of carcases before slaughter there are the risks that healthy meat may become infected subsequent to slaughter, either during preparation from contaminated instruments, cloths, etc., in the slaughter-house, from infected rodents and flies, or from handling by human carriers. It is well established that rats and mice are common carriers of Salmonella, particularly of *S. typhi-murium*. Table III summarises results of surveys into the incidence among rats in various cities of the world and it is significant that the highest incidence of 13.6 per cent. reported by Ghosal (1941) was obtained from rats caught in the area of the slaughter-houses and port of Calcutta.

TABLE II

SHOWING THE INCIDENCE OF SALMONELLA ISOLATED FROM PIGS

Country	Percentage infection	References
Uruguay	2·2	Hormaeche & Salsamendi, 1936
Netherlands	2·8	Clarenburg, Vink & Huisman, 1949
Sweden	3·6	Lilleengen & Mickow, 1952
England	2·5	Report, 1947
	3·8	Scott, 1940
U.S.A.	5·9	Cherry, Scherag & Weaver, 1943
	13·0	Levine, Peterson & Graham, 1945
Mexico	7·1	Varela & Zozaya, 1942
Spain	7·5	Pumarola Busquets, 1954
Indonesia	16·7	Kraneveld, Erber & Mansjoer, 1951

TABLE III

SHOWING THE INCIDENCE OF SALMONELLA ISOLATED FROM RATS

Town	Percentage infection	References
Brisbane	1·5	Mackerras & Mackerras, 1949
Baltimore	4·2	Li Huan-Ying & Davis, 1952
San Francisco	6·2	Meyer & Matsumura, 1927
Liverpool	7·3	Khalil, 1938
Aberdeen	11·0	Kerrin, 1928
Calcutta	13.6	Ghosal, 1941

It is difficult to assess the risks of meat and other foods becoming contaminated from human carriers. It has been suggested that the percentage of human carriers of Salmonella in this country is probably low (Taylor, 1950), and in an industrial area it has been estimated at about 1 per cent. (Grant, 1951). Armstrong & Allison (1955) recovered one strain of *S. typhi-murium* from 200 human gall bladders, and in New York, Felsen, Weil & Wolarsky (1950) found an incidence of 0.25 per cent. of inapparent infections among 2,000 people. There is a good deal of evidence to show that the majority of people who recover from clinical infection with Salmonella do not excrete the organism after a period of a few weeks. Thus, Kwantes (1952) found that after nine weeks, only three out of 112 people infected with *S. typhi-murium* were still excreting the organism. Similar results have been recorded by Lennox, Harvey & Scott Thompson (1954), and Miller, Nicol & Ramsden (1955). Nevertheless, there is usually a small proportion of infected individuals who continue to excrete Salmonella for a longer period, and it is clear that taking the over-all population of this country, a considerable number of people may be excreting

Salmonella at any given time. The risks of food becoming contaminated from individuals who may be unaware that they themselves are infected, must always be borne in mind by those concerned with public health.

The prevention of human infection arising from meat and meat products necessitates ensuring that meat which is infected shall be identified as such, and not allowed to leave the slaughter-house for human consumption; and that subsequent contamination during the preparation and distribution of meat products shall be prevented by adequate hygienic measures. In the first instance it would be of advantage if infected animals could be identified before being presented for slaughter. While in a small proportion of cases this may be possible, there is no reliable and practical test which can detect the symptomless carrier animal. It is this type of animal which presents the greatest hazard, since it appears clinically normal before slaughter, and may present no typical macroscopic changes of the carcase after slaughter. The importance of this type of animal as a source of infection in the slaughter-house has been recognised by many. In 1936, Dierkes found that 22 of 500 calf skins were contaminated from faeces, and more recently Galton *et al.* (1954) found 17 of 147 bovine faeces samples to be infected at the time of slaughter. Field (1948) has shown that the gall-bladder is a common site of infection in the carrier animal. Bacteriological examination alone can reveal infection in an apparently normal carcase, as has been demonstrated in Hamburg during 1950-53, when bacteriological examination showed 849 out of 9,645 carcases to be infected. In a number of countries, all carcases received for emergency slaughter are examined bacteriologically. Thus, Prokhorov (1941) examined 16,438 meat samples and found the infection rates to be: pork, 16 per cent.; veal, 5.6 per cent.; mutton, 3.0 per cent.; horsemeat, 1.5 per cent., and beef, 1.4 per cent. Similarly, Patrizi (1947) recorded 1.6 per cent. of samples infected from 1,655 casualty animals, the incidence being highest in pork. Other workers have published similar results which emphasise beyond all doubt the importance and the necessity of incorporating bacteriological examinations in the meat inspection procedures of certain classes of carcases. It is realised that at the present time many slaughter-houses lack suitable laboratory, cold storage, and other facilities necessary to carry out bacteriological examinations. It is all the more important, in view of the apparent increase in the number of outbreaks and sporadic cases of food poisoning in this country, that some energy should be directed towards increasing slaughter-house facilities so that animals are slaughtered and all meat is adequately inspected under the strictest standards of hygiene and cleanliness, and that bacteriological examinations are performed on all carcases received for emergency slaughter. The importance of these measures has been stressed by specialists in many countries (Ketz, 1937; Carlinfanti, 1945; Clarenburg & Vink, 1947, 1948; Bywater, 1952; Forrest, 1954; Norval, 1954; Rose, 1954; Sanderson, 1954; Schonberg, 1954).

At the present time, there is little information on the incidence of Salmonella in retail meat products in this country. In other countries, however, the incidence is variable and sometimes may be alarmingly high. Galton, Lowery & Hardy (1954) have recorded infection in 23 per cent. of 217 samples of fresh pork sausages and in 12.5 per cent. of 127 samples of smoked pork sausages. They also noted that the highest infection rate occurred in meat from local abattoirs. Cherry, Scherago & Weaver (1943) found 5.2 per cent. of 250 samples of retail meats to be infected and that pork was the commonest source. Moreover, they concluded that infection was related to animals of origin rather than to contamination in the markets. From the public health point of view it is important to remember that infected retail meat and meat products can be sterilised only after adequate cooking. For example, Salmonella may survive in sausage which is lightly fried for 15 minutes. Miller, Nicol & Ramsden (1955) have found that a 4-oz. pie requires a temperature of 160° C. for one hour or 193° C. for 40 minutes in order to kill Salmonella in the centre of the pie. Similarly, meat weighing 1,000 g. can be sterilised by heating to 100° C. for one hour (Cordes, 1949).

Eggs and Egg Products

Human foods composed of eggs and egg products are a common source for Salmonella food poisoning, and as already mentioned, poultry constitute a large reservoir for these micro-organisms. Numerous surveys have been carried out to ascertain the incidence of infection in eggs from ducks and chickens. Table IV summarises the findings of a representative number of such surveys undertaken in different countries. This Table emphasises two important points; first, that infection is more common in duck eggs than in chicken eggs, and second, that the commonest serotypes to be found are *S. typhi-murium* in duck eggs and *S. pullorum* and *S. gallinarum* in chicken eggs. There are reports that *S. pullorum* can be pathogenic for man, but compared with other serotypes the disease produced is not so serious. Experimentally, it appears that particularly large numbers of *S. pul-*

TABLE IV

SHOWING THE INCIDENCE OF SALMONELLA ISOLATED FROM DUCK AND CHICKEN EGGS

Country	Species of egg	Percentage infection	References
England	Duck	0·15	Anon, 1954
Dutch Indies	,,	2·7	Kraneveld & Erber, 1940
Germany	,,	4·8	Lerche, 1936
Canada	Chicken	0	Chase & Wright, 1946
England	,,	0	Bernstein, 1952
Australia	,,	0	
		S. pullorum and S. gallinarum	Watts & Mander, 1953
Argentine	,,	0	
		S. pullorum and S. gallinarum	Simeone, 1944
U.S.A.	,,	0·04	Carter, Powell & Borts, 1950
		S. pullorum	

lorum are required to produce clinical infection in man (McCullough & Eisele, 1951). In ducks it is not uncommon for infection with *S. typhi-murium* to be carried in the ovary and also for organisms to be excreted in the faeces. The result is that duck eggs may be laid with infected yolks or with infection on the shell from faecal contamination. Under suitable conditions *S. typhi-murium* may penetrate the egg shell. It is also known that the rate of infection is much higher among eggs with cracked and faecal-contaminated shells than it is among eggs laid under clean, hygienic conditions.

Research has shown that to prevent human infection from the consumption of eggs and egg products, a great deal can be done in the various stages of egg production and preparation. Reliable serological tests are widely used to eliminate infection with *S. pullorum* and *S. gallinarum* from poultry flocks. Unfortunately, the use of such tests for the detection of birds infected with other serotypes is not so successful. Among ducks, for example, the agglutination test can detect a proportion of infected birds, but as in other animal species, the symptomless carrier may go unnoticed since the serum agglutinin titre may be low. Strict attention should be given to farm hygiene to ensure that faecal contamination of shells is kept to a minimum. In the case of duck eggs, only those with clean and uncracked shells should be sold to the public, and in some countries these eggs are labelled with the name of the species of origin.

The high concentration of protein in egg preparations increases the difficulties of sterilising the material without denaturing the protein. Schneider (1946) found that a temperature of 142° F. reduced the rate of infection with Salmonella from 18.2 per cent. to 1.6 per cent. Salmonella serotypes in liquid whole egg vary in their susceptibility to heat. For example, *S. pullorum* is more readily killed under these conditions than is *S. senftenberg* or *S. cerro* (Winter *et al.*, 1946), and the susceptibility of any particular serotype may be affected by the *p*H of the egg preparation (Anellis, Lubas & Rayman, 1954; Osborne, Straka & Lineweaver, 1954). Salmonella in a suspension of egg yolk and cornflour may not be killed by a temperature of 100° C. for 10 minutes followed by 60° C. for 20 minutes (Neely & Nelsen, 1951). Recently, however, Semple, Meredith Davies & Parry (1956) have found that Salmonella in egg albumin are killed by heating to 130 °F. for five-and-a-half to six-and-a-half days. Shell eggs, particularly duck eggs, must be fried on both sides for at least four minutes to ensure that they are sterile. Clarenburg & Burger (1950) recommend that large duck eggs should be boiled for 14 minutes or boiled for 10 minutes and left for a further five minutes before being eaten. It is important that caterers and others concerned with food preparation should be acquainted with the risks to public health which can be avoided by adequate cooking of eggs and egg products, and also by ensuring that such foodstuffs are not stored for some hours after preparation and before consumption.

Milk and Milk Products

Human infections with *Salmonella* derived from milk have been reported from time to time. Such outbreaks are characterised by their explosive nature and usually involve illness in many individuals in an area supplied with milk from a particular farm. Moreover, such outbreaks tend to occur more frequently in the summer months and usually affect rural communities where local milk supplies are not pasteurised before distribution.

It is common for milk to become infected from the faeces of carrier animals (Conybeare & Thornton, 1938; Sutherland & Berger, 1944) and poor conditions of hygiene under which the milk is handled and distributed in rural areas will facilitate the risks of milk contamination. Occasionally a cow suffering from generalised Salmonella infection may secrete milk which contains Salmonella (Puilinger & Millar, 1945). If this milk becomes added to the bulked supplies from a farm the risks to human health in the locality supplied with this milk are considerable.

Although Salmonella are relatively susceptible to heat treatment, they can exist for many weeks in contaminated material. For example, *S. paratyphi B* will remain viable for at least seven months in sour milk and in the dried crusts of milk which occur in the seams of unwashed milk cans (Meyer, 1953). The survival of *S. typhi-murium* and other serotypes for variable periods of time in cheese (Emanuiloff, 1941; Fabian, 1946; Tucker *et al.*, 1946), and butter (Boyer & Tissier, 1950) constitute an additional hazard. Human health can be safeguarded by maintaining high standards of dairy hygiene and by pasteurising all milk supplies.

Domestic Pets

A variety of animal species may be kept as domestic pets under conditions in which animals come into close daily contact with the human population. Dogs and cats commonly live under these conditions and recent surveys have shown that the incidence of Salmonella in dogs may vary widely. In this country it appears to be about 1 per cent. (Cruickshank & Smith, 1949), but in parts of the U.S.A. it may vary between 1.2 per cent. to about 15 per cent. and even higher in some districts (Gorham & Garner, 1951; Watt & DeCapito, 1950; Varela, Perez-Rebelo & Olarte, 1951; Adler, Willers & Levine, 1951; Mackel *et al.*, 1952). Among dogs kept in kennels, contact between animals and the communal feeding of possibly infected foodstuffs has resulted in high rates of infection among some animals (Wolff, Henderson & McCallum, 1948; Kintner, 1949; Ball, 1951; Stucker *et al.*, 1952; McElrath, Galton & Hardy, 1952). Fewer surveys have been made on cats, among which the known incidence may vary between 0 and 1.4 per cent. (Gorham & Garner, 1951; Cruickshank & Smith, 1949; Ball, 1951). Pigeons, guinea-pigs, mice, hamsters, tortoises, and ornamental birds may also be kept as domestic pets, and all these species are susceptible to infection.

Although there is a potential danger to human health from handling infected domestic pets, the risks should not be over-emphasised (Buxton, 1955).

The greatest hazard is probably associated with the nursing of clinically infected animals in the home, and in these circumstances the owner should be made aware of the importance of cleanliness and disinfection when handling such animals. Whatever the danger may be, it can be reduced by paying careful attention to personal hygiene and by ensuring that foodstuffs fed to domestic pets are free from Salmonella infection.

I have tried to draw your attention to the most important channels through which Salmonella infections may be transmitted from animals to man. The incidence and vehicles of infection are diverse and they differ from one country to another according to climatic conditions, variations in the development of animal husbandry, contacts between man and different species of animals, and the national standards of public health. There is much still to be learned about the incidence, epidemiology, and control of these infections, and the veterinarian is most suited to deal with the varied problems of the public health aspects of this disease in animals.

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A Case of Pancreatic Disease in the Dog

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DESCRIPTIONS of pancreatic abnormalities are relatively rare in British literature although the subject has recently been reviewed by Joshua (1956). We feel, however, that although the information on the following case is incomplete in certain aspects, it is nevertheless worthy of record and discussion in view of several interesting features.

History

The subject was a Black Labrador, male, seven years of age, of normal weight. The onset of illness was sudden, vomiting being profuse and food refused. On palpation, the dog, which was normally of a placid disposition, snapped at the examiner ; it was obviously in great pain, and whilst this appeared to be diffuse, it was more apparent in the anterior abdomen. The dog was disinclined to move.

Although pyrexia was slight, 0·6 mega procaine penicillin was administered daily for the next four days, together with 6 ml. leucotropin. This brought about an improvement, and at the end of the fourth day glucose solution was administered orally and retained. However, this improvement was temporary and by the sixth day of illness a gradual decline commenced, and in spite of injections of glucose saline no improvement occurred. On the fifth day of illness the urine gave the following results :—

Colour—amber, cloudy
Specific gravity—1·012
Reaction—acid
Protein—35 mg. per cent.
Sugar—negative
Bilirubin—positive
Bile salts—positive.

No abnormalities in the centrifuged deposit were observed. Four days later the animal's condition was extremely grave. Apart from having a uraemic smell to the breath, there was also a distinct aroma of rancid butter, which was particularly marked when the pale, putty-like faeces were passed. At this time the blood examination gave :—

Haemoglobin—16·1 g. per 100 ml.
W.B.C.—15,000 per cu. mm.
Blood urea—215 mg. per 100 ml.

Agglutination tests for *Leptospira canicola* and *Leptospira icterohaemorrhagiae* gave negative results. The dog succumbed on the 12th day.

The clinical signs during illness led to a tentative diagnosis of uraemia associated with chronic interstitial nephritis, but the initial pain and later the aroma of rancid butter, suggested that other factors were involved.

Post-mortem Findings

The salient features of the *post-mortem* examination were as follows :—

Congestion of the omentum and peritoneum in the region of the duodenum and pancreas. A small abscess was observed between the submucosa and musculature of the duodenum, approximately 2 inches from the pyloric sphincter. The pancreas was enlarged to approximately three times its normal size and was intensely inflamed and studded with large black areas. The tissue was friable and showed numerous cavities.

Histological Examination

Histological examination of tissues gave the following picture :—

Approximately three-quarters of the gland showed advanced necrotic changes of the parenchyma and islets of Langerhans, with no vestige of nuclear structure remaining. The areas involved, which were lobular in distribution, showed an eosinophilic coagulum. On the fringe of these areas were zones of leucocytic infiltration surrounded by hypertrophied trabeculae. Adjoining areas were packed with blood cells, but fibroblasts were numerous and distributed at random within the haemorrhagic zones.

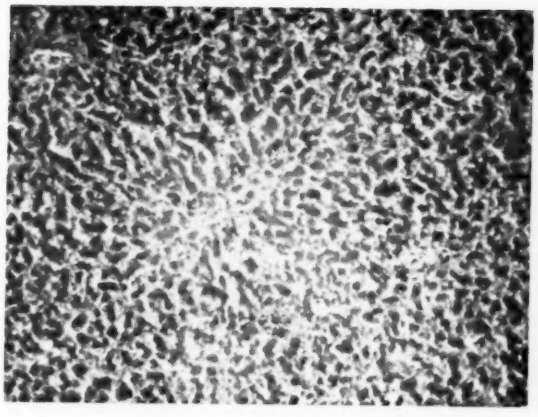
In the remaining portion of the gland, scattered areas showed normal structure while others which were lobular in distribution showed atrophic changes of the parenchymal cells. These were lightly stained. The cytoplasm was reduced in amount and contained numerous vacuoles, the nuclei were placed to one side of the cells and the cell walls were irregular due to shrinkage. The peripheral cells of the islets of Langerhans showed alpha granules (oxyphilic) and within the islets were many beta cells containing basophilic granules as demonstrated by Goromi's stain. Surrounding each islet were clumps of acini cells which had retained their normal structure and stained darkly.

Liver—all areas examined showed changes varying from cloudy swelling to necrosis of the parenchymal cells with some obliteration of lobular structure. *Kidney*—fibrosis of the boundary zone was particularly marked and extended in certain areas to the medulla. Many cells of the uriniferous tubules showed changes characteristic of cloudy swelling. In one area around a glomerulus cellular infiltration had occurred. *Spleen*—venous congestion with diminished white pulp and much hemosiderin. The trabeculae were increased in size.

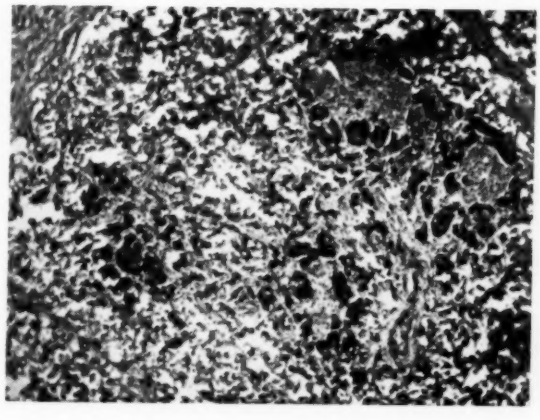
Discussion

In many ways the history of the case falls into the description given of the clinical signs of acute pancreatic

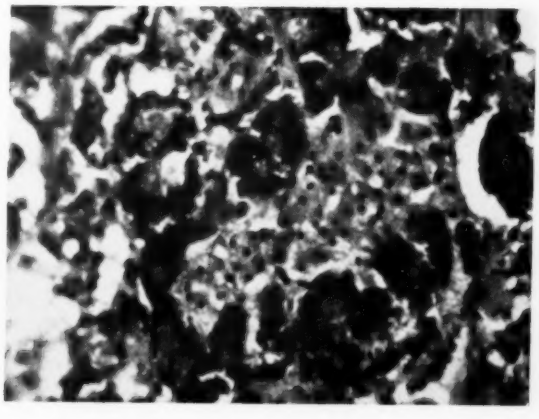
Pancreatic necrosis showing complete obliteration of parenchyma and islets of Langerhans. Invasion of fibroblasts (bottom left) and a zone of haemorrhage is demonstrated. × 180.



Liver—showing cloudy swelling and early necrosis of hepatic cells. × 180.



Pancreatic atrophy—showing intact islets surrounded by a few acini cells which have retained their normal structure. × 180.



Islet of Langerhans surrounded by a ring of acini cells with atrophied cells in the periphery of the photograph. × 550.

necrosis (Coffin & Thordal-Christensen, 1953) although the duration is considerably longer than those reported by these authors, who gave the average length of illness in such cases as 5·2 days. This may be accounted for by the fact that only part of the gland was so involved and that the islets of Langerhans remained functional in other areas.

The description of the atrophied part of the gland conforms to the changes described in human literature associated with blockage of a pancreatic duct without secondary infection. It is well known that this gland is very susceptible to diminished functional activity, resulting in disuse atrophy.

There appear to be two possible causes of the necrotic changes, and the first is that infection had entered certain regions of the gland. In connexion with this, it is interesting to note that Thal & Brackney (1954) showed that the injection of a 1 : 40 solution of staphylococcal toxin in saline into the pancreatic duct of dogs and rabbits was capable of producing profound haemorrhagic and necrotic pancreatitis.

The second possibility, which to the writers seems most probable, is that influx of bile into the pancreas occurred, causing chemical irritation and necrosis. According to Nielsen & Bishop (1954), 84 per cent. of pancreatic glands examined by these authors had two separate openings into the duodenum, one by the duct of Santorini *via* the minor duodenal papilla, which actually drains the major ducts of the gland, and the second by the duct of Wirsung which opens into the bile duct at or near to the major duodenal papilla. In this group the duct of Wirsung anastamosed with either the left or right branch of the main duct. The average distance between the major and minor papilla was 27·5 mm.

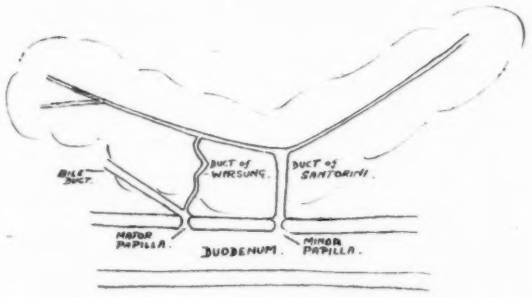


Diagram of Type I pancreatic duct system drawn from radiograph by Nielsen & Bishop (1954).

Consequently, an obstruction of the major duodenal papilla could easily cause influx of bile into the main pancreatic ducts *via* the duct of Wirsung. From the recent experimental work of Stein *et al.* (1956) it is seen that ligation of the pancreatic duct in the dog is not in itself sufficient to cause acute haemorrhagic pancreatitis with pancreatic necrosis, although following pancreaticocholedochostomy (anastamosing the main pancreatic duct, *i.e.*, duct of Santorini with the main bile duct) and the obstruction of the sphincter of Oddi or major papilla, acute haemorrhagic pancreatitis occurred and the presence of bile was detected in the pancreas.

It can therefore be assumed that before the state of acute haemorrhagic pancreatitis can occur, biliary obstruction must be present at a point between the ampulla of Vater (the junction of the duct of Wirsung with the bile duct) and the major duodenal papillae. In the case described the presence of the abscess in the duodenal wall and the resulting reaction was sufficient to bring this about wholly or partly and the bilirubin uria and microscopical appearance of the hepatic tissue supports the fact that biliary obstruction was in fact present.

The reason for the area of acinal atrophy and the apparently functioning islets of Langerhans may possibly be explained by the fact that the effect of the influx of bile was not apparent in every part of the pancreatic gland and that the necrosis which followed cut off the duct system from certain lobules and brought about a disuse atrophy. If this occurred, and the islets of Langerhans remained functional in a small area of the pancreas, then an answer is given as to why the animal survived for a longer period than one would have expected.

The blood urea nitrogen figure of 215 is very high and is not generally attributed to such cases, but as no doubt the condition involved considerable protein destruction, and in view of the fact that evidence of chronic interstitial nephritis was present histologically, it may be that the kidneys were incapable of dealing with an elevated blood urea nitrogen, and hence the signs of uraemia.

Summary

A case of pancreatitis giving the clinical history, *post-mortem* findings, and histological examination of the affected pancreas is described, and the possible pathogenesis is discussed.

Acknowledgments.—We are indebted to Mr. G. Skulski, M.R.C.V.S., and Mr. C. Hart for the preparation of the histological sections, and to Dr. R. K. Archer, of the Equine Research Station, for preparation of the microphotographs.

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TENANT FARMER'S SHOW SUCCESS

A remarkable success was gained at the recent Perth show and sale of Aberdeen-Angus cattle, when a tenant farmer, Mr. W. Robertson, defeated the élite among beef breeders by winning the supreme championship with the yearling Presto of Bregach. Subsequently, this bull fetched the highest price—12,000 guineas—on the first day of auctioneering. A total of 17 head were exported at a price of just over £28,000, Argentina taking 11 of them.

An Unusual Bovine Tumour : Myxomatous Polyps of Rumen and Reticulum

BY

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AND

L. G. DONALD

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Subject. Shorthorn cross bullock, two-and-a-half years old.

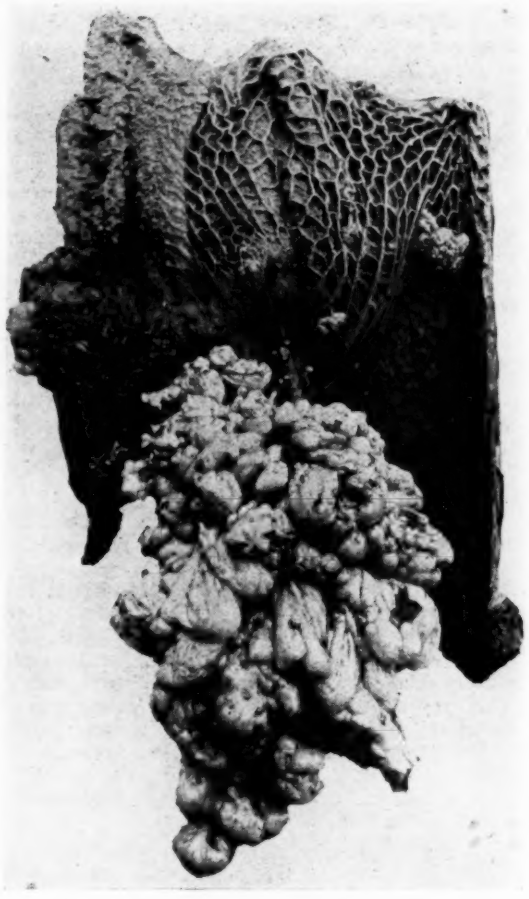
History. Nine months prior to slaughter, the owner asked one of us (R. W. J.) to examine a bullock affected for a few weeks with recurrent tympany. There was no history of illness in earlier life and the other bullocks on the same grazing were normal. Actinobacillosis of the rumen or reticulum was suspected. Iodine and cobalt were administered. An excellent response was obtained and the bullock apparently made a complete recovery.

Abattoir Findings. The bullock was slaughtered fat on May 9th, 1956, weighing 11½ cwt. on the hoof. No abnormalities were observed until the rumen was opened, and there, attached to the wall near the oesophageal groove, lay a large pedunculated mass of grape-like tumours. Subsidiary growths were observed arising from adjacent portions of the rumen wall and also from the wall of the reticulum (see photograph).

Laboratory Examination. The main lesion measured 14 by 11 inches and weighed 17 lb. The "grapes" varied in size from that of a pea to a small orange, and, on section, consisted of a soft, translucent, colourless, gelatinous material.

Histologically, the lesion resembled that of myxomatous tissue with scanty cells scattered irregularly throughout a clear matrix.

Discussion. It seems probable that the recurrent tympany was caused by the lesion when it was small, and stopped as the lesion grew larger and heavier. The nature of the lesion is uncertain. A true myxoma is a rare neoplasm, and its appearance may be simulated by myxomatous or oedematous changes in a fibroma, or even in fibrous tissue of chronic inflammatory origin. There were no signs of actinobacillosis or other chronic inflammation in the material sectioned, and the lesion is classed tentatively as a myxoma rather than as a myxofibroma because of the histological appearances, and the scanty amount of collagen present.



PRESIDENT OF THE N.F.U.

At the recent annual general meeting of the National Farmers' Union, Sir James Turner was unanimously re-elected president for the 12th consecutive time.

Sir James has served the Union for nearly 30 years. He joined as branch secretary for Worksop, Nottinghamshire, in 1928 and nine years later, before he was 30, he was elected chairman of the Nottinghamshire branch. He was deputy council delegate for the county from 1936 to 1942, when he became delegate, and two years later he was elected vice-president.

He was knighted in 1949 and received the honorary degree of LL.D. at Leeds University in 1952. In October of last year he was presented with the American Farmers' Union medal for distinguished services to agriculture. He has, of course, been a guest of honour at a number of B.V.A. functions during his term of office.

EXPORT OF PEDIGREE DOGS

The export of pedigree dogs from Britain has increased more than seven times in 10 years. A total of 4,131 dogs were exported last year, compared with 577 in 1947.

Air Commodore Wright, chairman of the Kennel Club committee, is quoted as saying that one in every 25 pedigree dogs registered at the Kennel Club was exported. More than half, 2,235, went to the United States.

Of the rest, Canada took 389. The Miniature Poodle was the most popular export, and 1,589 were sent abroad, compared with 243 Pekingese, 196 Cocker Spaniels, 148 Yorkshire Terriers, and 114 Boxers.

It is not surprising, in view of these figures, that for Cruft's Show this year there is a record entry of 6,562 dogs.

In Brief

BOVINE KETOSIS

The influence of dietary factors in the aetiology of ketosis is still a controversial matter. Shaw (1956), who has discussed post-parturient ketosis (" primary ketosis") in detail from all its aspects, although according pasture-feeding " antiketogenic activity," concludes that there is little evidence that either a high or low protein ration is conducive to the development of ketosis. Hopkins (1956) believes that feeding in-calf cows on rations promoting the laying down of flesh rather than fat might reduce the incidence of ketosis. Adler (1956) has reinvoked the high butyric acid content of silage as a complicating dietary factor.

Vigue (1955) has reviewed the various, and by now numerous, forms of treatment and reports the highest proportion of recoveries using ACTH and cortisone. Other corticoids have been claimed as equally effective (Gessert, Shaw & Chung, 1955 ; Shaw, Gessert & Chung, 1955 ; Speicher, Shaw, Chung & Gessert, 1955 ; Morris & Hall, 1956). It is difficult, however, to assess the reliability of the results obtained by Shaw and his co-workers when Shaw himself (*loc. cit.*) remarks that " a failure to get a good response to an adequate dose of one of the more effective gluco-corticoids or ACTH is even better evidence that one is not dealing with primary ketosis." Shaw considers that it may be advisable to administer potassium as an adjunct to treatment with corticoids, since many of these preparations induce hypokalaemia. Other methods designed to restore the depleted hepatic glycogen reserves also find favour with their various exponents but only oral glycerol and propylene glycol (Johnson, 1954) and sodium propionate (Hoflund, Nordstrom & Hallgren, 1955) appear to afford a logical approach and to be of true value.

R. J. GARNER (Oct., 1956).

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THE NATIONAL FEDERATION OF YOUNG FARMERS' CLUBS

At the outset of its Jubilee Year, the National Federation of Young Farmers' Clubs has been honoured by the Patronage of Her Majesty the Queen. The National Federation was formed in 1932, in which year its present Constitution was adopted: its foundations date back to 1922. There are at present 1,500 clubs with some 70,000 members.

Legal Pitfalls of Veterinary Practice

BY

CHARLES STEVENS

VII.—MASTER AND SERVANT: DEFAMATION

IN the first article in this series a brief reference was made to the position of master and servant, and the veterinary surgeon should understand clearly his responsibility under the doctrine of vicarious responsibility. The meaning of servant in this context is not restricted to that ordinarily understood, that is a servant in the domestic sense, it is a legal term applied to any employee who must carry out the day to day orders of his employer, as distinct from the independent contractor such as a builder or decorator who arranges to do a job and is left free to decide how to do it.

The master is responsible for any tortious acts committed by the servant while in his employ provided the acts might be accepted to be part of the employment. If an assistant or a dispenser slanders a client when talking with other clients in the surgery or on the rounds, the person slandered may sue either the veterinary surgeon, the assistant, or both as it is part of the assistant's duty to attend to the needs of clients and to talk with them. If, however, on his way home the assistant carelessly knocks somebody down with his car and causes damage this is not a liability to the veterinary surgeon, as it is not in the ordinary course of the assistant's employment.

Mention was made in the previous paragraph of the dispenser who might slander a client, and it would not be amiss at this stage to consider briefly the tort of defamation. Within recent months a veterinary surgeon was threatened with an action for defamation because his dispenser spoke recklessly to clients in the surgery about another client. Defamation, which has been described as the publication of a statement which tends to lower a person in the estimation of right-thinking members of society generally, or which tends to make them shun or avoid that person, may be written, in which case it is libel, or spoken, in which case it is slander. The law of libel is too vast and complicated to set out in detail but one particular aspect is that of the reference or testimonial. The general opinion is that testimonials are worthless because, being fairly open documents, most employers will take great care what they write because of the law of libel. In any case, no employee is going to submit a copy of a testimonial which is damaging to himself. It would be an advantage if employers would cease to ask for testimonials and thus put an end to what is in some ways an unsatisfactory practice. It would be better were they always to enquire direct of persons whose names were given as references. Similarly, it would be desirable if employers ceased to give open testimonials and offered, instead, to provide references direct to other employers. There is no compulsion to pass an opinion one way or the other when asked, but if one does give either a testimonial or write a specific reply in answer to an enquiry from a prospective employer, there are certain points one should be aware of.

Comment on an employee has qualified privilege; in other words, it is protected against an action for libel, provided that the person who writes the opinion has a duty to inform the recipient and the recipient has a definite interest in the subject matter. It may be fairly assumed that statements made about past employees and sent on request to a prospective employer are of interest to both parties and will possess qualified privilege. On the other hand it should be borne in mind that qualified privilege can be destroyed by proof of malice. An action may be brought for libel, whether damage can be proved or not, but actions for slander cannot normally be brought unless damage can be proved.

Slander of the following types, however, is actionable without proof of special damage:—

(a) Suggestion that the person defamed has committed a criminal offence, punishable at first instance with imprisonment.

(b) Suggestion of an objectionable or contagious disease which would encourage other persons not to associate with him.

(c) Imputation of an unchastity or adultery to any woman or girl.

(d) A suggestion of unfitness, dishonesty or incompetence in any office, profession or trade, held or carried on by the person defamed at the time when slandered.

The veterinary surgeon should always be circumspect if forced to discuss his professional colleagues with clients. Professional ethics apart, there is always a risk of committing defamation, and note should be taken of a further tort known as slander of title or injurious falsehood. Slander of title is a false and malicious statement about a person, his property, or profession, which damages not necessarily his personal reputation, but his business, professional and material interests.

In this and the foregoing articles an endeavour has been made to point out some of the major legal traps which can enmesh the unwary veterinary surgeon. The common law is of course much wider than the points we have been able to dwell upon, and in conclusion one can do no better than again to emphasise the necessity for every veterinary surgeon being conscious always of the professional standards he must uphold, and the need to take out a good insurance policy or membership of the Mutual Defence Society.

This article concludes the series.

ANIMAL BOARDING ESTABLISHMENTS

A Private Member's Bill entitled " Animal Boarding Establishments " has been introduced in the House of Commons. The object of the Bill is to regulate the keeping of boarding establishments for animals, and for purposes connected therewith. It provides that nothing in the Act shall apply to premises, or part thereof, used by a veterinary surgeon or veterinary practitioner to accommodate animals while undergoing treatment.

Current Literature

BOOK REVIEWS

Neoplasms of the Domesticated Mammals: A Review. E. COTCHIN. (1956). Commonwealth Agricultural Bureaux. Review Series No. 4 of the Commonwealth Bureau of Animal Health, Farnham Royal, Bucks. Price £1.

A review of the voluminous literature on neoplasms of the domestic animals was long overdue and this monograph will be invaluable, not least to those workers interested in the comparative aspect of the subject. Since the classic work of Feldman (1932) there has been a number of articles on mammalian oncology but there has been nothing so comprehensive as this review by Cotchin. He is to be congratulated on having admirably compressed such a vast literature within the compass of a monograph. The bibliography is extensive and well set out; there are omissions, *e.g.*, Plummer's survey (*Can. J. comp. Med.* (1951). **15**. 231) but these are inevitable in a work of this nature.

The monograph deals with tumours according to organ systems rather than histological types and the domestic animals are considered in the order horse, ox, sheep, pig, dog and cat. There is a useful introductory chapter on the general incidence of tumours with a few notes on metastasis, multiplicity and causation of tumours. This section, however, is brief, a longer and more critical discussion would have improved this chapter.

This criticism applies to one or two other chapters in the monograph. The author has perhaps condensed the literature too much and some expansion of the material by including more detail of the cases recorded together with the author's own critical comments would have increased the usefulness of this review.

The review ends with a table indicating some of the species differences in the occurrence of neoplasms and this table together with the author's general conclusions will be of great interest to the comparative pathologist. Cotchin concludes that the important neoplasms of domestic animals fall into two groups. In one group the neoplasms are restricted to one species or are of importance in one species only whereas in the " wide range " group the tumours affect with some frequency two or more species of domestic animals.

Veterinary Obstetrics and Genital Diseases. By S. J. ROBERTS. Published by the Author, Ithaca, New York. (1956). Distributed by Edwards Brothers, Inc. Ann Arbor, Michigan. Price $10.50.

A considerable amount of work has obviously gone into the preparation of this book, which is all the more valuable because of the author's wide practical experience of the subjects concerned.

The book is presented in two parts. The first is entitled Obstetrics, and in detail deals with obstetrical anatomy, pregnancy diagnosis, embryology, physiology and pathology of gestation, parturition and dystocia. The second part covers Genital Diseases under the headings of physiology of reproduction and infertility, and ends with a chapter on artificial insemination.

The above list of contents indicates the wide scope of this book. It was intended as a text-book for students,

and for practitioners who are still students. One feels, however, that the author has achieved more than this. The detail with which the subjects have been treated makes this a reference book of infinite value.

The major criticism is that in a book of this size, over 500 pages in length, there are only 37 illustrations. Thus, when dealing with the mechanics of obstetrics, illustrations and diagrams are an absolute necessity, otherwise great confusion is likely to arise in the mind of the reader.

The presentation of the whole volume is pleasing ; dogma has been avoided, and copious references have been cited and are listed at the end of each chapter. This is undoubtedly a reference book which should find its way into every veterinary library, be it public or private.

The Cat's Medical Dictionary. By HAMILTON KIRK. Routledge & Kegan Paul. Price 15s.

According to his preface, the author's aim in this book for the layman has been " to give an introduction to the meaning of technical terms and disease names together with a brief résumé of the causes of illness, symptoms and first-aid treatment," and the veterinary surgeon may approach the book hoping that it will prove helpful in putting over many explanations to cat-owning clients. This, unfortunately, does not prove to be the case, due partly to its verbosity and partly to the fact that many of the opinions expressed in it will be challenged by the veterinarian reader.

The book is composed of three parts, preceded by an introduction. This is in very general terms but ends with a remarkable and rather meaningless list of diseases which, the author states, " either do not occur in the cat or are very rare," and from which he deduces that " in comparison with the dog, the cat is resistant to quite a number of maladies which are common in the dog." The author comments that the list is not complete. The reviewer would add that it will by no means command agreement by all veterinary surgeons as to its accuracy ! Is diabetes much rarer in the cat than in the dog ? Could cancer be said to be so very rare ? Is hydrocele, or for that matter bronchocele so very common in the dog ?

In Part I of the book, entitled " The Normal Cat," there is a chapter on old age and its influence on health, in which is interposed a quotation from *The Daily Express* entitled, " Do Cats' Tails act as Air Brakes ? " and which ends with a page or two on signs of good health. This, to put it mildly, gives a disjointed "Alice Through the Looking Glass " effect to the arrangement of subject matter, and this impression is retained throughout the following chapter on Anatomical and Other Characteristics which ends in a paragraph on diseases communicable to man. This rather sketchy feature would be improved by some mention of infection from bites and scratches which is surely the commonest of all hazards to the handler.

Next come chapters on general management and on feeding and breeding. That on feeding gives no information on the relative value of the various foods described in it. The words protein, carbohydrate, fat, vitamin, etc., are not so much as mentioned. This at least is a change from the pseudo-scientific treatment often accorded to this subject in text-books, but contrasts oddly with the declared aim to introduce the reader to technical terms and gives no cogent reasons for the rather dogmatic advice given on diet.

The remainder of Part I, The Normal Cat, is taken up by a discussion on management of the sick.

Part II is an encyclopaedia of diseases which could have been improved by leaving out such unnecessary items as *Acanthosis nigricans* about which the author can only say it is too rare to merit attention, and the description of instruments unlikely to be used by the layman such as the Kirschner-Ehmer splint which, if considered of interest at all to the cat owner, might have been mentioned in the section on fractures instead of given a separate heading and illustration.

The illustrations in general are not particularly helpful. Many are of conditions shown in animals other than cats, and in by no means all cases does the author point this out. It is not easy to see what value is derived from a photograph of artificial eyes.

The final brief section of the book deals with euthanasia and rat extermination, and while it may be desirable to mention cyanide gas as a method of rat extermination, it hardly seems wise to describe its use without some warning that the cat owner will be handling dangerous materials. To give due credit, it is said that the cats should of course be removed first.

In short, it is to be regretted that this book cannot conscientiously be recommended to the cat owner and does not come up to the past standard of the author who, in his " Index of Treatment," has shown that he can produce a useful book.

ABSTRACTS

Studies on " Trembling in New-born Pigs." Preliminary report. CHRISTENSEN, ERNA, & CHRISTENSEN, N. O. (1956). *Nord. Vet. Med.* **8.** 921–934.

Trembling is a disease of new-born pigs characterised by tremor of the legs and sometimes of the head. In this paper the authors suggest that in affected pigs there is incomplete myelination of the C.N.S., especially in the cord. Of the 11 affected animals examined, three showed greatly reduced myelination, six showed slight to moderate myelin deficiency, while two were considered to be normal. Two normal animals were used as controls. It is suggested that the disease may result from an insufficiency in the diet of the sows during gestation.

A. C. P.

Treatment of Foul in the Foot : Parenteral Use of Varizyme in the Treatment of Nonresponding Foot Rot in Cattle. LEVINTHAL, A. A., & EASTERBROOKS, H. L. (1956). *J. Amer. Vet. Med. Ass.* **129.** 422–425.

Streptodornase and streptokinase are enzymes prepared from streptococci ; the former has a liquefying effect on pus and the latter assists the formation of the fibrinolytic enzyme, plasmin. A mixture of the two is used to speed the healing of certain inflammatory processes and to facilitate the access of therapeutic agents to them. For example, streptokinase-streptodornase has been used in the treatment of indolent wounds, bursitis and osteitis in horses and in canine

otitis. For use in animals the addition of human plasminogen is necessary to activate the streptokinase.

Eight cases of foul in the foot which had resisted previous treatment were given tetracycline and varizyme (a streptokinase - streptodornase - human plasminogen preparation). The usual dosage was 2·5 g. tetracycline intravenously and an intramuscular injection containing 100,000 units streptokinase with sufficient plasminogen to activate it and 25,000 units streptodornase. This was generally repeated several times at four- to eight-day intervals. Four cases recovered completely, three recovered except for negligible lameness and one remained lame. Two cases relapsed but were successfully treated by the same means.

Resistant cases of foul are frequent, and such treatment might sometimes be considered as an alternative to amputation of the digit. The present cost of the drugs (one dose of tetracycline-varizyme under the regimen suggested would be of the order of £5) is an obvious drawback.

J. E. S.

Helminth Infection in Horses. DRUDGE, J. H. (1956). *Vet. Med.* **51.** 349–357.

This paper is a useful review of our knowledge of the effects, control and chemotherapy of infections of the horse with nematodes, cestodes and bots, based on the author's experience in the horse-breeding area of central Kentucky ; it includes a useful bibliography.

The review is written in non-technical language and most of it is about strongyle and ascarid infections and their control and treatment. For strongyle infections 25 to 30 g. of phenothiazine per 1,000 lb. bodyweight are given without a fast in a drench as a bolus, or in the feed or by stomach tube. Constipated horses, or those in poor condition, should not be treated. For weak or anaemic horses 5 g. of phenothiazine daily are recommended until the full therapeutic dose has been given. Bran helps, because it is a safeguard against constipation.

Periodic therapeutic doses of phenothiazine may, however, allow infestations to build up and become heavy, and half the dose (12·5 g.) every three to four weeks is given on some Kentucky horse farms and this is regarded as being the most successful periodic treatment ; but, occasionally, horses show sensitivity to phenothiazine and develop haemolytic anaemia. The low-level treatment has therefore been worked out, and a useful review of this is given.

In Kentucky 2 g. phenothiazine are given daily with the grain ration for the first 21 days of each month, the drug being withdrawn for the rest of each month. Foaling mares should be treated when they are brought in for breeding and foaling, and their treatment should be continued as long as the mare has a foal at her side. Barren mares are also treated, but suckling foals will not, in general, need treatment. Sucklings can be treated either by allowing them to feed first from the mare's feed containing 2 g. phenothiazine, or by giving them 1 g. daily for the first 21 days of the month from a separate feed-box. Weanlings and yearlings should have the 2-g. dose. Horses in heavy training or racing should not have the low-level treatment, but stallions should have it throughout the year. The author does not know of any toxic effects of this low-level treatment. Some of the 12 horses so treated by him for four years had 4 g. phenothiazine daily for the first two years without toxic effects. The system inhibits the egg-production of the strongyles and also the development of their larvae, so that it reduces the contamination of the pastures and the level of infection. Work is quoted which claims that it also kills some of the adult strongyles. There is no evidence that drug-resistant strongyles develop. Nevertheless, the low-level system has not been generally adopted in Kentucky, and there have been objections that horses treated by it do not develop and perform according to expectations, though this has not been proved.

For the treatment of ascariasis the author reviews the use of carbon disulphide, which is widely used in doses of 6 drams (24 c.c.) per 1,000 lb. bodyweight, or, for younger horses, 8 to 12 c.c. at eight weeks old, 12 to 16 c.c. at 12 weeks, 16 to 22 c.c. at 16 weeks and 16 to 24 c.c. for weanlings and yearlings. The drug is given after a fast of 18 hours before treatment, and with four hours fast after, water being allowed. Sucklings are removed from the mare for several hours before and after treatment and the mare is milked before suckling again. Laxatives, especially oils, should not be given and constipated horses should not be treated ; nor should this drug be mixed with phenothiazine.

The drawbacks of carbon disulphide are considered and the use of toluene, which can be 100 per cent. effective, at the rate of 0·1 c.c. per lb. bodyweight in fasting horses, is discussed. Piperazine adipate, at the rate of 10 g. per 100 lb. bodyweight, has the advantage that it is not toxic, can be given by several methods without fasting and is effective against both strongyles and ascarids. It may be given to foals at eight weeks to kill off the first ascarid infections and twice more, at four-week intervals to kill later infections. Further treatments of yearlings and weanlings are given to kill subsequent lighter infections.

The author also considers the effects of bots on the tongue, mouth and stomach and their occasional wanderings to the bile ducts, brain, nasal sinuses, peritoneal cavity and, as the author found, the ovary. They are treated by clipping the hair to remove the eggs, or by warm washes to induce hatching of the eggs ; and with carbon disulphide.

The difficult diagnosis of habronemiasis is discussed, but carbon disulphide removes these nematodes, phenothiazine being ineffective against them.

The author has confirmed that *Trichostrongylus axei* passes from horses to cattle and sheep and from the sheep to the horse. Its effects are briefly considered and work claiming that phenothiazine is effective against it is quoted.

Finally, the author briefly discusses the lack of drugs effective against *Oxyuris equi*, the larvae of which feed on and damage the intestinal mucosa, and the lack of drugs effective against *Strongyloides westeri*. He reports that *Anoplocephala perfoliata*, which was formerly thought to be uncommon in North America, is the only species of this genus observed in Kentucky, where infestations with it are so light, and its incidence is so low, that treatment is not usually required.

G. L.

News and Comment

THE BRITISH SMALL-ANIMAL VETERINARY ASSOCIATION

As announced in THE VETERINARY RECORD of November 24th, 1956, a group of members have discussed the formation of an association composed of veterinarians concerned in small-animal work in this country. The following steering committee, under the chairmanship of Mr. C. E. Woodrow (London) was elected to undertake the formation of this new association:—

Messrs. G. N. Henderson, London, and S. F. J. Hodgman, Kennett, Suffolk; Mrs. E. Jackson, Darlington; Mr. B. V. Jones, London; Miss J. O. Joshua, London, and Messrs. J. S. Lauder, Hale Barns, Cheshire; D. E. Leask, Manchester; J. Rhodes, Waterlooville; F. G. Startup, Worthing; W. B. Singleton, Kennett (Hon. Sec.); W. M. Taylor, London; R. L. Townson, St. Austell; M. Young, London.

The committee, under the chairmanship of Mr. C. E. Woodrow, met on January 2nd to correlate the aims, objects, and proposed activities of the British Small-Animal Veterinary Association which is to be formed to " promote the cultural, scientific, and professional interests of veterinary surgeons and practitioners engaged in small-animal practice, teaching, and research."

The proposed activities of the Association are as follows:—

(a) To establish and maintain contact with appropriate committees of the B.V.A. and R.C.V.S., and to bring to their attention matters of interest and concern to the British Small-Animal Veterinary Association and where practicable to act in concert with them. It is considered undesirable and impracticable for the Association to act independently of the B.V.A. or R.C.V.S., and its function should be rather to act as liaison between its members and the recognised negotiating bodies.

(b) To maintain a current record of research workers and their subjects, of interest to members.

(c) To advise members of available laboratory facilities provided by organisations and individuals.

(d) To compile and maintain an index of references of work published in world literature concerned with small-animal veterinary science, with the intention of circulating a regular bulletin.

(e) To hold regular half-day or whole-day meetings in various parts of the country for the discussion of subjects of interest to the association.

(f) To collaborate with the proposed International Association of Small-Animal Specialists which is to be associated with the International Veterinary Congress.

An inaugural meeting is to be held in London early in March, but in the meantime, those wishing to apply for provisional membership should contact the honorary secretary, Mr. W. Brian Singleton, Canine Research Station, Animal Health Trust, Kennett, Nr. Newmarket, Suffolk.

CENTRAL ADVISORY COMMITTEE ON A.I.

The Minister of Agriculture has reconstituted the Central Advisory Committee on Artificial Insemination and has extended its terms of reference so as to enable it to advise him on the control and development of artificial insemination, not only of cattle but of live-stock generally (except poultry) in England and Wales.

The new Committee will be under the chairmanship of Lord St. Aldwyn, Joint Parliamentary Secretary to the Ministry. The other members are:—

Nominated by the Minister

Sir John Barlow, Dr. J. Hammond, and Professor H. G. Sanders.

Nominated by the B.V.A.

Mr. L. E. A. Rowson.

Nominated by the Milk Marketing Board

Sir Thomas Peacock, and Dr. Joseph Edwards.

Nominated by the National Farmers' Union

Mr. J. W. Salter Chalker, Mr. F. Vincent, and Mr. H. Shilleto.

Nominated by the National Cattle Breeders' Association

Mr. E. C. J. Allday, and Mr. I. H. Lamb.

Nominated by the National Pig Breeders' Association

Mr. A. S. Cray, and Mr. W. Bellerby.

Nominated on behalf of Private Centres

Mr. P. Sutcliffe.

The secretary of the Committee is Mr. V. W. Wood of the Ministry.

DOG LICENCES

A recent judicial decision which made a person temporarily in charge of a dog liable for the dog's licence, may have caused some perplexity to veterinary surgeons who own kennels or provide in-patient facilities. It may be recalled that this matter was dealt with in the 1956 Report of the Council, R.C.V.S., following the receipt of a letter from a member of the profession. The member wrote:—

" Our local police have informed us that we are required by law to produce a current licence in our name, for every dog which we have in our kennels, as a boarder or under treatment. Apparently it is insufficient for the owner to have a licence for the dog, but we must have one to cover the time the animal is with us." The Report went on:

" ' Following consultation with the Home Office and the Treasury upon the terms of the Dog Licences Act, 1867, the following reply was received from the Treasury:

" " " My Lords are advised that the legal presumption under Section 8 of the Dog Licences Act, 1867, as to who is the keeper of a dog can be rebutted by evidence that someone other than the person in whose

custody etc. the dog is found or seen is the person who is really keeping the dog. Mere ownership is not the criterion, but evidence that someone else owns the dog and pays for its maintenance is clearly sufficient to establish that that other person is the true keeper of the dog in law." '

" Subsequently, the Home Office declined to circularise police authorities with this information, but members may wish to know if approached by the police that they are on sound legal ground if they do not take out a licence for every dog boarded or under treatment in their premises."

The matter was raised in Parliament last week, through the following Question and Answer:—

Sir J. Lucas (January 31st) asked the Chancellor of the Exchequer if, in view of contrary decisions in the courts, he will introduce legislation declaring, for the avoidance of doubt, whether a licence to keep a dog applies to the owner or not, and whether his agent, servant, or gamekeeper is expected to get an additional licence if he looks after the dog for him as occasion demands.

Mr. Powell: The law requires any person who keeps a dog to have a licence. I am advised that if the owner of a dog normally houses and feeds it, an agent, servant, or gamekeeper would not be required to hold a licence in addition if his custody of the dog were temporary only; but that it a matter for the courts.

U.S. RESEARCH POST FOR BRITISH VETERINARIAN

The appointment is announced of Dr. J. R. M. Innes to the post of pathologist in the United States research and development unit of the Wellcome Research Laboratories; he will also act as adviser on animal health and husbandry. Before accepting this new appointment Dr. Innes was chief of the pathology branch of the chemical warfare medical laboratories, and Chemical Corps Research and Development Command of the United States army chemical centre, Maryland. He left England in 1948, having been senior principal scientific officer, Chemical Defence Experimental Station, Porton, Wilts., and prior to that, head of the sub-division of pathology, at the biological laboratories of Imperial Chemical Industries. He has had a distinguished academic career. He graduated M.R.C.V.S. at Edinburgh in 1924, took his Ph.D. at Cambridge in 1931, D.Sc. (Edinburgh) in 1941, and Sc.D. (Cambridge) in 1945. He is a member of a number of learned societies both here and in the United States, and has contributed extensively to the scientific literature.

His many friends will wish Dr. Innes well in his new post, and congratulate the Wellcome Research Laboratories on this brilliant acquisition to their staff.

WELLCOME RESEARCH LABORATORY (EAST AFRICA)

The Wellcome Foundation has decided to establish in Kenya a research laboratory to study diseases of animals in tropical and subtropical areas. At the outset it will be concerned mainly with problems which may be amenable to the chemotherapeutic approach. The site on which this laboratory will be built is some 6 miles from Nairobi and within 1 mile of the veterinary research laboratories at Kabete.

Mr. J. K. H. Wilde, B.SC., M.R.C.V.S., A.R.C.S., has been appointed Head of the laboratory and will travel to Kenya about the end of this month. In the meantime he is working at the Wellcome Research Laboratories in Beckenham, Kent. Mr. Wilde recently retired from the Colonial Veterinary Service, having served as a Research Officer in Tanganyika and, later, as Deputy Director of Veterinary Research, Federation of Nigeria, at Vom.

EXPORTS OF PEDIGREE STOCK

The Live-stock Export Group reports that the number of animals shipped through the quarantine stations in the quarter ended December, 1956, shows an appreciable rise when compared with the comparative period of 1955. A rise of 32 per cent. under present conditions must be regarded as highly satisfactory, particularly to North America where the increase was 130 per cent. Exports to Eire were slightly above those for the 1955 quarter—139 against 124, and those to Australia were nearly equal; less stock, however, was sent to New Zealand.

The breakdown of figures into the various types of stock exported was as follows: Australia, 49 cattle and 3 goats; Eire, 24 cattle and 115 sheep; New Zealand, 8 cattle; North America, 95 cattle and 43 pigs. The Black Welsh Cattle society report that two bulls of that breed were exported to the Falkland Islands during the period July to December, 1956.

The new address of the Group is 49, Knightsbridge, London, S.W.1. (Belgravia 5975.)

LIVERPOOL FAVOURS THE HORSE

Quotations made from THE RECORD of 50 years ago often lament the decline of the horse, and prophesy hard times for the profession. The latter, happily, have not come about, and in one city at least the horse still holds his own. The Cleansing Department of Liverpool Corporation have just received permission to replace eight of their team of 44 heavy horses. These horses are used to pull the Corporation dust carts, and are considered to be far more economical than petrol-driven vans where door-to-door work is concerned. At present, of course, they are also saving the petrol that would be used by 44 lorries. A Corporation official is quoted in the Liverpool press as saying, " The horse is coming into his own in Liverpool just now. There are more of them to be seen at work, especially around the docks, than has been the case for many years."

IN PARLIAMENT

Abattoirs and Private Slaughter-houses, Warwickshire (Cleansing)

MR. J. JOHNSON asked the Minister of Agriculture, Fisheries and Food if he is aware of the inadequate washing out and disinfecting arrangements at abattoirs and private slaughter-houses in Warwickshire, where swine fever suspects and contact pigs are sent; and whether he will take steps to ensure the improvement

of these facilities at the markets of this county, and particularly of Birmingham, Coventry, and Stratford-on-Avon abattoirs.

MR. GODBER: My right hon. Friend is not aware that the arrangements to which the hon. Member refers are inadequate, but if any particular incidents are brought to his notice, he will be glad to have them investigated.

Pig Industry (Government Policy)

MR. WILLEY asked the Minister of Agriculture, Fisheries and Food whether he will now make a further statement on the Report of the Reorganisation Commission for Pigs and Bacon.

MR. GODBER: My right hon. Friend has nothing to add to the statement of the Government's policy for the development of the pig industry in the United Kingdom, which was published as a White Paper on November 26th last. The necessary legislation is in preparation.

Cattle (Exports to Europe)

MR. HURD asked the Minister of Agriculture, Fisheries and Food to state the total number and value of butchers' cattle exported to the Continent of Europe since June last; the numbers that have qualified for the fat-stock guarantees; and the amount paid.

MR. GODBER: No precise figures are available, but it is estimated that just over 50,000 head of cattle were exported in the six months June 1st to November 30th last year. The number which qualified for the fat-stock guarantee is not known, but it was probably less than a third of the total number. On this basis, the subsidy payment was between £300,000 and £350,000; against this has to be set the removal from the market of certain cattle in little demand, which tends to improve the general level of prices to the benefit of the Exchequer. We have no details as yet for December and January.

MR. HURD asked the Minister of Agriculture, Fisheries and Food if he has now decided to make an inquiry into the export of live cattle for slaughter on the Continent; and what immediate measures he is taking to strengthen the rules to ensure humane treatment of these cattle in transit.

MR. GODBER: My right hon. Friend and my right hon. Friend the Secretary of State for Scotland are giving urgent consideration to these matters. They expect to be able to make an announcement very soon.

HOLIDAY EXCHANGES

We have heard of a number of French veterinary surgeons who would like to arrange exchange visits this year between their children and those of colleagues in the United Kingdom. The following are brief details, and readers who may wish to follow up any of them are invited to write to the General Secretary, B.V.A., for further details.

EASTER HOLIDAYS

A boy of 15 would like to entertain in France over the Easter holidays an English boy of the same age, preferably one whose parent(s) have a rural practice; the visit to be returned in the United Kingdom during the summer holidays.

SUMMER HOLIDAYS

Au pair *or exchange*. A 19-year-old boy (Bonnétable, Sarthe) wishes to visit England after July 20th for about a month, and to entertain an English boy for about a month in France, the visits to be consecutive, but with no preference as to order in which the visits are made.

Exchange

An 11½-year-old boy (Grignols, Gironde) wishes to visit England for three weeks.

A 15-year-old girl (Montbazon, Indre-et-Loire) wishes to visit England, preferably the London area, for about a month from July 1st onwards, and to entertain an English child for about a month, the visits to be consecutive with the children together throughout.

A 13-year-old girl (Bonnétable, Sarthe) wishes to visit England after July 20th, for about a month and to entertain an English child for about a month in France, the visits to be consecutive with the children together for both, but with no preference as to order of visits.

CORRESPONDENCE

A "pen-friend" is wanted for a boy of 12½ who lives in Marcigny, Saone-et-Loire.

We should also like to remind readers of two other French girls, both about 16 years old, from Corrèze and Constantine (Algeria) respectively, about whom a note appeared in THE VETERINARY RECORD for November 3rd, 1956, and who are still anxious to find correspondents in this country.

THE STEELE-BODGER MEMORIAL PRIZE

This Prize was created by the fund established in 1953 to perpetuate the memory of the late Harry Steele-Bodger. It takes the form of a travelling scholarship, or a contribution to a tour abroad. In addition applications for grants of small amounts to enable practising members of the profession to make short study tours abroad would receive sympathetic consideration.

Members of the Royal College of Veterinary Surgeons are eligible; together with final-year students of any of the university veterinary schools in the United Kingdom and Eire.

The closing date for applications is July 31st, and further particulars may be obtained from the General Secretary of the B.V.A.

HEREFORD CATTLE FOR RUSSIA

A trainload of Hereford cattle, which involved a five-figure deal between the Soviet Ministry of Agriculture and British breeders, left Rotterdam yesterday for the Russo-Polish frontier. Forty-three cattle were purchased.

The Russians will use the cattle to improve their own beef breeds. The fact that a number of female cattle have been included suggests the establishment of pedigree Hereford herds in the Soviet Union.

Stockmen from Britain will accompany the animals across the Continent. The Russians have long appreciated the value of Herefords for improving their own beef breeds.

HUNGARIAN VETERINARY STUDENTS DEMAND BETTER LITERATURE

The following interesting paragraph is quoted from an article on Hungary in a recent issue of *The Saturday Evening Post*:—

"A few days later, in Budapest, the students of the Veterinary University called a 'grand meeting,' and demanded that Russian should no longer be the only foreign language they could learn. Their professors had shown them British, French, and German periodicals, placing them side by side with similar Russian publications. The students realised how much more knowledge and how much better illustrations the West had at its disposal than the Russians."

LORD HUDSON

The death of Lord Hudson, on February 2nd, recalls the name of a war-time Minister of Agriculture who played a prominent part in helping to raise the industry's productivity to the high level it achieves to-day. He also was closely interested in veterinary education, and was a guest of honour at the luncheon when Dr. W. R. Wooldridge, then President of the N.V.M.A., announced the creation of the Veterinary Educational Trust (now the Animal Health Trust).

The Survey Scheme came to fruition during his term of office. He took a great interest in it, and gave valuable encouragement to those who initiated, and later administered the Scheme.

After his relinquishment of office, Lord Hudson devoted considerable time to the work of the Royal Agricultural Society and the British Friesian Cattle Society. On his farms in Wiltshire he became a successful breeder, and his pedigree cattle earned an almost world-wide reputation.

MR. ROBERT MITCHELL

Mr. Robert Mitchell, whose death is announced at the age of 84, was the doyen among Glasgow veterinary surgeons. He qualified in 1896 from the Glasgow school, and entered his father's practice, to which he ultimately succeeded. He retired in 1948. In addition to holding a successful mixed practice he specialised in the treatment of circus animals, and was well known to many of the leading showmen.

He is survived by his wife, son and daughter, to whom our sympathy is expressed.

MR. ALEXANDER POTTIE

Mr. Alex Thomson writes:—

It came as a great shock to members of the profession in Scotland to learn of the death of Alex Pottie of Paisley. He was an active, well-liked, and respected practitioner in Paisley and Greenock for over 30 years and was the third generation to practice in the area. His son, Alister, is at present an undergraduate at the Glasgow University Veterinary School.

Alex Pottie always took an active interest in all the affairs of the profession. He was a regular attender at divisional meetings, being a member of the Scottish Metropolitan, and secretary of the West of Scotland Division. Additionally, he served on the Council of the B.V.A.

His interests in the civic life of his community made calls on his leisure, including active membership of the Rotary Club of Paisley, and chairmanship of the local Unionist Committee. He also was a staunch supporter of his church.

He was a keen and successful sportsman. In his youth he played rugby for Greenock Wanderers and later was a member of Erskine Golf Club of which he had been captain.

A large company of his many friends gathered at Woodside Crematorium on Wednesday, January 30th, to pay their tribute to a man who had served his generation in a kindly and straightforward way to the best of his ability at all times. The following members of the profession were present:—

Messrs. J. R. McKay and V. J. A. O'Reilly, assistants; Professor and Mrs. W. L. Weipers, Messrs. Alex Thomson, representing the President of the B.V.A.; M. H. W. Miller, representing the Ministry of Agriculture; D. Boyce, President, West of Scotland Division; R. F. Ross, J. G. McGregor, A. H. F. Robb, W. J. McLeod, A. Barclay, A. Hamilton, A. L. Wilson, representing Ayrshire Division; James Wilson, R. M. Smith, A. Chapman, H. Begg, R. E. McGrath, H. Andrew, Jas. Love, A. R. Campbell, and J. Isbister, Professor J. S. S. Inglis, and Messrs. S. Jennings, representing Scottish Branch of the B.V.A., I. M. Lauder, W. Martin, S. G. Abbott, and Nicol Nicolson.

R.C.V.S. OBITUARY

We record with regret the deaths of the following members of the profession:—

MITCHELL, Robert, 971, Sauchiehall Street, Glasgow, C.3. Graduated Glasgow, July 18th, 1896. Died January 25th, 1957, aged 84 years.

POTTIE, Alexander, 26, Love Street, Paisley, Renfrew, Lieut. R.A.V.C. (T.A.) (Retd.). Graduated Glasgow, December 14th, 1922. Died January 28th, 1957, aged 58 years.

COMING EVENTS

February

13th (Wed.). General Meeting of the Society of Practising Veterinary Surgeons at the Royal Veterinary College, Camden Town, N.W.1, 2.30 p.m.

15th (Fri.). Annual General Meeting of the Royal Counties Veterinary Association at the Caversham Bridge Hotel, Reading, 2.15 p.m.

19th (Tues.). 81st Annual General Meeting of the Eastern Counties Veterinary Society at the Bell Hotel, Norwich, 11.15 a.m.

21st (Thurs.). Annual Ball of the Royal (Dick) School of Veterinary Studies in the Assembly Rooms, George Street, Edinburgh, 8.30 p.m.

Annual General Meeting of the South Eastern Veterinary Association at the Royal Star Hotel, Maidstone, 2.30 p.m.

22nd (Fri.). Annual Ball of the Liverpool University Veterinary Society in the Students' Union, 8 p.m.

March

2nd (Sat.). Meeting of the Scottish Regional Group of the A.V.T. & R.Ws. at the University of Glasgow Veterinary Hospital, 10.15 a.m.

6th (Wed.). Annual General Meeting of the A.V.T. & R.Ws. Northern Region at the Veterinary Hospital, Liverpool, 2 p.m.

30th (Sat.). Annual Convention of the Ceylon Veterinary Association in the Queen's Hotel, Kandy, Ceylon.

April

10th, 11th and 12th (Wed., Thurs. and Fri). B.V.A. Committee and Council Meetings in Edinburgh.

FOOT-AND-MOUTH DISEASE

The area described in the schedule below is declared to be an Infected Area for the purpose of preventing the spread of foot-and-mouth disease:—

IN THE COUNTY OF EAST SUFFOLK

The Boroughs of Lowestoft, Beccles and Southwold.

The Petty Sessional Divisions of Bungay and Beccles.

In the Petty Sessional Division of Hoxne: The parish of Metfield.

In the Petty Sessional Division of Mutford and Lothingland: The parishes of Fritton, Ashby, Lound, Herringfleet, Somerleyton, Blundeston, Flixton, Oulton, Carlton Colville, Barnby, Mutford, Gisleham, Rushmere and Kessingland.

In the Petty Sessional Division of Blything: The parishes of Henstead, Benacre, Wrentham, Covehithe, South Cove, Frostenden, Uggeshall, Stoven, Brampton, Westhall, Spexhall, Rumburgh, Wissett, Holton, Sotherton, Henham, Wangford, Reydon, Easton Bavents, Walberswick, Blythburgh, Blyford, Wenhaston, Halesworth, Chediston, Linstead Parva, Linstead Magna, Huntingfield, Cockley, Walpole, Bramfield, Thorington, Darsham, Westleton and Dunwich and so much of the parishes of Sibton and Yoxford as lies to the north of the road running from Peasenhall via Yoxford to Theberton excluding the said road.

IN THE COUNTY OF NORFOLK

In the Petty Sessional Division of Earsham: The parish of Earsham.

The Foot-and-Mouth Disease Infected Area around Sotterley, East Suffolk, has been extended to include:—

IN THE COUNTY OF NORFOLK

In the Petty Sessional Division of Loddon and Clavering: The parishes of Norton Subcourse, Heckingham, Thurlton, Haddiscoe, Loddon, Hales, Raveningham, Toft Monks, Wheatacre, Thwaite, Broome, Kirby Cane, Stockton, Aldeby, Burgh St. Peter, Ditchingham, Ellingham, Geldeston and Gillingham.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak

Anthrax

Aberdeen. Inchgarth Farm, Cults (Feb. 2).

Derby. 3, Woodall Lane, High Moor, Killamarsh (Jan. 30).

Herts. Home Farm, Wyddial, Buntingford (Jan. 29).

Kent. Quex Farm, Birchington (Jan. 26).

Leics. Spion Cop Farm, Broughton Astley (Jan. 31).

Staffs. Little Wickenstones Farm, Biddulph Moor, Stoke-on-Trent (Jan. 30).

Wilts. Biss Farm, West Ashton, Trowbridge (Jan. 28).

Yorks. Blandsgill Farm, Howgill, Sedbergh (Jan. 26).

Atrophic Rhinitis

Carmarthen. Bronhaul, Bancyfelin (Feb. 1).

Fowl Pest

Ches. Higher Thorns Green Farm, Ashley, Altrincham (Jan. 28); Stock Farm, Ashley, Altrincham (Feb. 1).

Essex. Sandon Poultry Services, Butts Green, Chelmsford (Jan. 27); Plummers, Lexden Road, West Bergholt, Colchester (Jan. 30).

Kent. Lodge Hill Farm, Rochester (Jan. 30); Chattenden Farm, Rochester (Feb. 1).

Lancs. 7 and 5, Arthur Lane, Ainsworth, Bolton (Jan. 27); Silk Mill Farm, Inglewhite, Preston; The Hollies, Buckholes Road, Higher Wheelton, Chorley; Providence House, Lancashire Road, Pilling (Jan. 28); 232, Hesketh Lane, Tarleton, Preston (Jan. 29); 3, Smallholding, Highfield Estate, Levenshulme, Manchester; Warr Lock Hill Farm, Bolton Road, West Houghton, Bolton; Malt Kiln Farm, Thistleton; Keepers Cottage, Thistleton; Salesbury Engineering Co. Ltd., Salesbury, Blackburn; 4, Highfield Road Smallholding, Levenshulme; 16-19, Smallholding, Highfield Road, Levenshulme (Jan. 30); White House Farm, Bretherton; Norbreck Hydro Farm, Norbreck Road, Cleveleys; Ivydene, St. Michaels-on-Wyre, Preston (Jan. 31); Moor Hey Farm, Greenhalgh, Kirkham; Hall Cross, Kirkham Road, Freckleton; Tanners Farm, Mawdesley, Ormskirk (Feb. 1); Lingrow Farm, Pilling; Balls Farm, Brook Lane, Little Hoole; Brookfields Farms, Old Lane, New Longton (Feb. 2); Willow Farm, off Chapel Lane, Longton (Feb. 3)

Northants. The Old House, Staverton, Daventry; Catesby Lane, Staverton (Jan. 28); The Garage, Staverton, Daventry (Feb. 1).

Yorks. West View, Minskip; No. 4, Council House, Harrogate Road, Minskip (Jan. 31), Prospect House, Minskip; Crown Dairy Farm, Milby, Boroughbridge (Feb. 1); Northfield, Bearswood Green, Hatfield Woodhouse, Doncaster (Feb. 2).

Swine Fever

Berks. 298, Nine Mile Ride, Wokingham (Jan. 29); School of Military Survey, Hermitage, Newbury (Feb. 4).

Bucks. Savoy Farm, Savoy Lane, Denham, Uxbridge (Jan. 28), Home Farm, Holmlea Road, Datchet, Slough (Jan 30).

Dorset. Manor Farm, Burton Bradstock, Bridport (Jan. 28); Kinson Lodge, Bearwood, Poole (Feb. 4).

Glamorgan. Newton Farm, Newton, Cowbridge (Jan. 28).

Hants. Court of Morning Farm, Honey Lane, Fontley, Fareham (Jan. 28); Home Farm, Holt Lane, Hook, Basingstoke (Feb. 4).

Hereford. Bosbury House Nurseries, Bosbury, Ledbury (Jan. 30).

Kent. Nash Farm, Nash Road, Margate (Jan. 28).

Lancs. Clay Lane Farm, Burtonwood, Warrington (Feb. 4).

Oxford. Elmsfield Farm, Chipping Norton (Feb. 1).

Somerset. Lower Stone Farm, Yeovil; Batch Farm, East Pennard, Shepton Mallet (Jan. 29).

Staffs. Swingbridge Farm, Pelsall Road, Brownhills, Walsall (Jan. 29); Lanes Farm, Seisdon, Wolverhampton (Feb. 4).

Surrey. Woodside Farm, Elstead, Godalming (Jan. 28); Piggeries at Steadman's Farm, Wood Street Green, Guildford; Rob's Farm, Tatsfield, Westerham (Feb. 1).

Wilts. Purbeck Piggeries, Tuckinghill, Tisbury, Salisbury (Jan. 28).

Yorks. Piggeries at Fairground Allotment, Walton Street, Hull (Jan 28); Tansterne Grange, Aldbrough, Hull (Jan. 30).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Lord Hudson

Sir,—The death of Lord Hudson removes from the scene a great Minister of Agriculture whose tenure of that office saw not only the renaissance of the farming industry of this country but, parallel with it, the rejuvenation of the veterinary profession.

I well remember his encouraging words at the annual luncheon of the N.V.M.A. in 1942 when, as President of the Association, I had the honour to announce the foundation of the Veterinary Educational Trust, later to become the Animal Health Trust. Robert Hudson, as he then was, coined the phrase "cat and dog complex" to describe the pre-war situation in which the profession, sorely neglected as was agriculture itself, had largely turned to the care of household pets as a means of livelihood.

He emphasised that, with the greater appreciation of the part that agriculture could play in the national economy, and of the way in which disease in herds and flocks could hamper all efforts to increase production, there also came a greater appreciation of what the veterinary profession stood for and its vital rôle in conquering disease.

"But," he added, "the confidence of farmers can only be won if they are assured that the veterinary practitioners are sufficient in numbers and adequately equipped with the latest knowledge to carry out their heavy and exacting task." That was why it was the task of all concerned to make their contribution during the next few years to the provision of the educational facilities necessary to ensure maximum efficiency and usefulness of the profession as a whole.

It will be recalled that it was Hudson who appointed the second Loveday Committee on Veterinary Education and who later accepted its recommendations on behalf of the Government.

Welcoming the creation of the Trust, the Minister said: "I am sure this will provide the veterinary profession with valuable resources for the sponsoring of educational expansion now and even more in future years."

Lord Hudson remained a firm friend of the Trust and indeed of the profession for the rest of his life, and though we shall sadly miss his help and advice, we at least have the satisfaction of knowing that he lived long enough to see in large measure the justification of his original confidence not only in our educational endeavours but also in our research work which came later and in which his interest was no less keen.

Finally, may I add a personal appreciation of his direct speaking, obvious sincerity, and enthusiasm for all causes with which he was connected? I met him many times, particularly during the war when, at farmers' meetings and demonstrations, I frequently had the privilege of supporting from the platform his appeals for greater efficiency in agricultural production. An honest and inspiring leader whose forceful methods may sometimes have led to misunderstanding but seldom failed to gain their objectives.

Yours faithfully,

W. R. WOOLDRIDGE,
Scientific Director.

The Animal Health Trust,
14, Ashley Place,
Westminster,
London, S.W.1.

February 4th, 1957.

The Post of Public Relations Officer

Sir,—The advertisement recently published in your columns for a P.R.O. at the B.V.A. leaves me wondering whether the Association really understands what a P.R.O. is, what his duties should comprise, and what they expect to get out of him.

No one disputes that the B.V.A. needs a Public Relations Officer for, whilst stressing the point that "public relations" is *not* free publicity, just what idea does the general public have of the veterinary surgeon? By "public" is not meant the veterinary surgeon's clients, but that vast number of people who never have truck with him. Do veterinary surgeons ever figure favourably in the daily news as a regular feature? Are their activities reported on the wireless? Has any step been taken to use the tremendous reaching power of television by, say, a film of the day's doings at the Beaumont Hospital? Granted the "vet" has been heard on "The Archers" programme, but just in that very light of veterinary ju-ju which a future P.R.O. must change. What of the veterinary surgeon and his future? Notwithstanding his ability he may sooner or later be drawn into some legislation, because of the political party dictatorship under which we live: the best brake on dictatorship is public opinion. "Good prospects for advancement" says the advertisement. Does the B.V.A. realise that it cannot afford to be without a P.R.O. and that it will be the Association which will have "good prospects for advancement" if it gets the right man?

The advertisement stipulates that the applicant must be a member of the veterinary profession. Does the writer of this advertisement honestly think he will find the qualities of a good P.R.O. in someone who has had to spend some six years, generally during the formative stage of life, intensely navigating the confined and narrow channels of "science" before sailing out on to the ocean of all-round experience? His fund of thought will not be of the right kind; he may know his own side of the relationship but what of the others? Where will have been his practice in "imaginings," in seeing possible and impossible connexions between things, for this facility is the

P.R.O.'s main armament. I might be wrong, but amongst the many veterinary surgeons I know, friendship and regard for each of them aside, even the most suitable of them for this post of P.R.O. would amply illustrate the phrase Aquinas christianised from Aristotle, *non potest dare quod non habet,* since a P.R.O. must have a limitless source within himself from which to draw: these ideas result from whatever mental discipline(s) together with as wide an experience in as many varied fields as possible. Veterinary surgeons, by their training and subsequent employment in veterinary matters, preclude themselves from the very things which make a good P.R.O. Colleagues of mine eminently successful in the P.R. field, in discussing this matter, considered that it appeared wellnigh impossible to find a veterinary surgeon who would make a successful P.R.O. without extensive training.

When a good P.R.O. is engaged, his existing connexions are also purchased: what does the B.V.A. expect to buy with the wage they are offering? But then it may be the design of the Association to maintain itself opaque and obscure.

Yours faithfully,

CLEMENT FENNELL.

Well,
Long Sutton,
Basingstoke,
Hants.

January 31st, 1957.

Acid Firing

Sir,—I cannot allow the letter by Brigadier Peatt published in THE VETERINARY RECORD of January 26th to go unanswered. I fully agree that acid firing is most useful, but cannot agree that his method has any real advantage over that commonly used. Of course, I would subscribe to the opinion of another writer that this quite unnecessarily complicated operation may possibly impress some clients.

Should one have to fire several horses on the same premises the use of sleek makes the situation interesting, particularly if one animal is a big heavyweight with plenty of bone and a short cannon, another a weedy lightweight with little bone and a long cannon. Furthermore, the number of animals who raise a foreleg when handled is considerable, and as sleek rucks up another minor embarrassment is likely, especially if one has already applied the acid once.

The advantages claimed for the use of perforated plaster can be gained more easily and just as efficiently without it, in other words, Brigadier Peatt uses a steam-hammer to crack a nut. I mentioned the twitch in my first letter because its immediate use was advocated by the Brigadier and I am glad he has now seen fit to trim his sails.

As I have worked with, and have much regard for, his brother, I hope to have the pleasure of meeting Brigadier Peatt and enjoying a long "horse" gossip.

Yours faithfully,

E. F. BECKETT.

Berkeley Lodge,
Blandford,
Dorset.

January 29th, 1957.

Sir,—The correspondence on acid firing has greatly interested me. In 1940 I read a paper to the Royal Counties Division, N.V.M.A., which provoked a discussion of such dimensions that a second meeting was needed, to which many of our most distinguished horse practitioners contributed. Following publication, a series of long and interesting letters was published in your columns.

The overwhelming evidence of the experts was that nothing had been found superior to firing for chronic tendon and ligament trouble, and I must confess that, having put forward the thesis that Mr. Trigger has just advanced in your issue of February 2nd, I have never since felt justified in maintaining my view that it was a relic of mediaeval barbarism.

I wonder if diathermy could be advanced as a substitute? Perhaps the Equine Station of the Animal Health Trust have some information for us?

Yours faithfully,

R. C. G. HANCOCK.

Meadham Cottage,
Hannington,
Basingstoke,
Hants.

February 3rd, 1957.

Methods of Injection

Sir,—In answer to Captain Danby one would say that the subcutaneous method of giving injections to animals, far from being "out of fashion" is as popular as ever. However, can we say that any one method is "the right one"?

Intramuscular injections, so roundly condemned by Capt. Danby, are well tolerated by dogs in my experience, and are in any case essential with many commonly used therapeutic agents. One wonders how a modern practice could be efficiently carried on without them. Rather than restrict our injection methods to the simplest, as suggested by Capt. Danby, we should develop *more* variety in our injection techniques in line with the medical profession.

Yours faithfully,

J. M. MITCHELL.

101, Sternhold Avenue,
Streatham Hill,
London, S.W.2.

January 28th, 1957.

Sir,—I was interested to read Captain Danby's letter in THE VETERINARY RECORD of January 26th.

When the route of injection of a drug is decided, two factors have to be considered. Firstly, the rapidity of the response required, the intravenous route giving the most rapid response, the subcutaneous route giving the slowest response, and the intramuscular route giving an intermediate response. Secondly, the nature of the preparation. Irritant solutions must be administered intravenously. Suspensions of insoluble drugs must be administered intramuscularly, also some mildly irritant solutions can be given by this route. Non-irritant solutions are given subcutaneously.

When one reviews the drugs commonly administered to dogs by injection one finds that the two most frequently employed are penicillin and streptomycin.

Injections of procaine benzylpenicillin* are suspensions and must be administered by the intramuscular route if they are to be absorbed efficiently. Injections of streptomycin should be administered intramuscularly. They are mildly irritant solutions not suitable for intravenous injection and need to be absorbed relatively rapidly. This, of course, is the reason why your correspondent has noticed that so many injections given to the dog are by the intramuscular route.

If one considers the biological products commonly administered to the dog one finds that all the vaccines are given by the subcutaneous route. Sera are usually administered subcutaneously, but may be given by intravenous injection if a quick response is desired.

As the volume of the preparations given by intramuscular injection in the dog is small they should not cause pain, although there is obviously some transient discomfort. In my opinion the pain most commonly inflicted upon the dog at injection is that associated with the use of a blunt needle and the correspondingly large force which is exerted in order to penetrate the skin, resulting in bruising of the subcutaneous tissues. Hypodermic needles may of course be resharpened, when they have become blunted through long use, if economic considerations preclude the use of a new needle.

I have not referred to the intraperitoneal route as this is rarely made use of in the dog.

Yours faithfully,
JOHN STRATTON.

Department of Medicine,
Royal Veterinary College,
Royal College Street,
London, N.W.1.

January 30th, 1957.

* "Mylipen," "Distaquaine," "Lenticillin," etc.

Petrol Rationing

Sir,—The statement with regard to dual-purpose vehicles used by veterinary surgeons, in your issue of January 19th, is misleading to say the least. Form Z.F.5a should be obtained, a record of every journey filled in daily, and must be available to the Ministry of Transport for perusal otherwise difficulty may be experienced in obtaining supplementary coupons.

Yours faithfully,
T. B. YARROW.

2, Cross Street,
Tenbury Wells,
Worcestershire.

January 24th, 1957.

Sir,—I cannot let Mr. Johnson's letter go unanswered. A circular was sent to all our clients on January 1st.

To infer that a 50 per cent. reduction of petrol in a general practice will not disrupt the practice suggests that your correspondent was not too economical with either petrol or time before rationing. Most practices will find it hard to carry on unless further supplies are forthcoming.

Yours faithfully,
P. J. WATERS.

93, Head Street,
Halstead,
Essex.

January 29th, 1957.

[It begins to look as though the V.V.B.F. will benefit from Mr. Johnson's promised cheque if this correspondence continues.—*Editor.*]

ADVERTISER'S ANNOUNCEMENT

MILTON-DEOSAN (SCOTLAND) LIMITED. In conjunction with their Scottish Agents, Messrs. Thomas Henderson & Co., Ltd., Milton Antiseptic Ltd., announce that the above company was incorporated on February 1st, 1957, registered in Scotland. This step is being taken to facilitate the administration of Milton-Deosan interests in Scotland where, it is believed, there is considerable scope for expansion.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
1st to 15th January, 1957		15	—	9	58	—	30
Corresponding period in	1956	17	—	—	73	—	30
	1955	34	—	—	40	—	38
	1954	13	—	—	108	—	61

TUBERCULOSIS (ATTESTED HERDS) SCHEMES

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at 31st December, 1956, was as follows :—

ENGLAND	WALES	SCOTLAND	TOTAL (GREAT BRITAIN)
93,087	35,346	39,308	167,741

TUBERCULOSIS ORDER OF 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period 1st October to 31st December, 1956, was 254.